Key points about a new National Protected Area System Plan in Trinidad and Tobago

- Trinidad and Tobago is among the most biologically diverse countries in the Caribbean
- There have been several previous attempts to draft and implement a National Protected Area System Plan
- The design approach for the new National Protected Area System Plan will assess the existing and previously designated protected areas through a gap analysis, to ensure the new system enhances the long-term conservation of biodiversity and provides the people of Trinidad and Tobago with the opportunity to access and enjoy the biodiversity of the country
- The design approach for the new National Protected Area System Plan will be guided by representation, resiliency, redundancy and the ecosystem-management approach
- There are a number of benefits to developing and implementing a system to support the management of protected areas in Trinidad and Tobago

The Food and Agriculture Organization of the United Nations (FAO/UN) is implementing a four-year project, Improving Forest and Protected Area Management in Trinidad and Tobago, on behalf of the Government of the Republic of Trinidad and Tobago. The overall project goal is to conserve globally important biodiversity and ecosystems in Trinidad and Tobago. The objectives are to facilitate the development of a new system of protected areas (PAs) for Trinidad and Tobago, consistent with the country’s approved 2011 Protected Areas Policy, by:

- Proposing a new PA system for conservation of biodiversity;
- Increasing management effectiveness of PAs; and
- Increasing the capacity for sustainable financing of PAs management.

Further background information on the project is available at http://eppd-tt.blogspot.com/p/gef-improving-forest-and-protected-areas.html
Context

Trinidad and Tobago is among the most biologically diverse countries in the Caribbean with over 3000 species of plants, 600 species of terrestrial vertebrates and 1100 species of recorded invertebrates. Its marine ecosystems are no less diverse, with over 900 species of fish, 198 marine algae, 40 species of coral and 5 species of sea turtles. Many of these species are endemic to the islands, including over 100 plants, 2 amphibians and 2 birds. Many of Trinidad and Tobago’s species are considered globally at risk of extinction, with over 70 species listed as threatened on the IUCN Red List. In addition, the country’s ecosystems are no less diverse, with 16 types of terrestrial vegetation communities across 3 eco-regions. In the coastal and marine environment, the country is similarly endowed with a diverse marine benthos occupied by a range of communities across 9 ecosystem types, including sea-grass beds, fringing coral reefs, and diverse marine substrates.

This diverse endowment of species and ecological communities has been the focus of many attempts to establish areas to conserve and manage the biological diversity of the country. These include the western hemisphere’s first legally established forest reserve at the Main Ridge in Tobago, designated in 1776. Since that time, protected areas have been declared under the Forest Act (Chap 66:01), Conservation of Wildlife Act (Chap 67:01), Environmental Management Act (Chap 35:05 - Act No 3 of 2000) (Environmentally Sensitive Areas Rules), and the Marine Preservation and Enhancement Act (Chap 37:02). All together, the areas formally designated total over 50 locations (Figures 1 and 2).

With these designated areas being added to over time and across multiple pieces of legislation, there has been a growing concern among managers, policy planners and other stakeholders that multiple designations of the same protected area has led to conflicting management approaches. In parallel, there has been a series of attempts to refine the protected areas of the country to make these consistent with international standards for protected areas, and to incorporate advances in the science and management of such natural areas.

Additionally, rapidly changing environmental and socio-economic conditions surrounding the perceived value, state of degradation and isolation and potential future uses of these areas have led to a call for a rationalization of these areas. In some cases, due to the degree of change in land use and loss of biodiversity elements, some previously protected areas may require de-gazetting, as their former value as protected areas may be irretrievably compromised. As a result, the existing legally designated protected areas do not represent the entire picture with regard to national attempts to protect the country’s biodiversity and landscapes.
A System Plan is an attempt to express a country’s vision of how (and how much of) its natural heritage is used for both conservation and sustainable use. It should cover the range of ecosystems present, link the key players (including civil society) responsible for developing and managing PAs, include processes for defining management options, setting priorities and integrating with other land use (recreation, tourism, quarries etc.). Protected areas were not declared in any systematic way so there may be ecosystems that are poorly represented among the areas declared.

In the period since 1972, there have been multiple attempts to improve the management of protected areas and formalize a national system of protected areas. These attempts have included national committees, draft policies, plans and legislation. However, to date, none of these attempts has resulted in significant changes to the formal system of protected areas for the country. Some important milestones in the evolution of national thinking on the role, value and configuration of the country’s protected areas since the 1970s, have included the:

- National Parks Systems Plan (Organization of American States (OAS) 1978)
- Tropical Forestry Action Plan (TFAP) (1991), and
- The recent trio of natural resource policies adopted by the Government of the Republic of Trinidad and Tobago, namely: the National Protected Areas Policy (2011), the National Forest Policy (2011) and National Wildlife Policy (2013)

In this context, the new National Protected Area Systems Plan is a key outcome of the 2012 GEF project on “Improving Forest and Protected Area Management in Trinidad and Tobago”. It builds on these previous attempts to rationalize the protected natural areas of the country, by using these plans as an initial framework. It further improves on their potential for long-term viability and creates a system that is in step with existing international norms for protected areas design, designation and management. Consistent with the new national policies, the improved viability of the new system should lead to benefits to national stakeholders including improved opportunities for sustainable livelihoods through more resilient flows of goods and services from these protected areas.
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**Benefits of adopting a National Protected Area System Plan**

The International Union for the Conservation of Nature (IUCN) has identified a number of reasons for taking a system approach to planning. These include:

- To relate protected areas to national priorities, and to prioritise different aspects of protected area development;
- To facilitate access to international and national funding, by defining priorities for investment in protected areas and increasing the level of confidence in the efficient use of funds and resources;
- To get away from a case by case, ad hoc, approach to resource management decision making;
- To target proposed additions to the protected area estate in a more rational and persuasive manner than ad hoc planning;
- To facilitate integration with other relevant planning strategies, such as those for national tourism, national biodiversity conservation or sustainable development;
- To help resolve conflicts, assist in making decisions relating to trade-offs, clarify roles and responsibilities of different stakeholders, and facilitate diverse stakeholder involvement;
- To provide a broader perspective for addressing site-specific issues, such as tourism management;
- To enhance the effectiveness and efficiency of the way in which budgets are developed and spent;
- To assist in meeting obligations under international treaties;
- To assist countries to be more proactive in conservation management, and in developing effective protected area systems;
- To encourage consideration of a “system” which incorporates formal protected areas and areas outside of protected areas;
- To provide a structured framework for a system of protected areas, ranging from areas managed for strict conservation to areas managed for a range of conservation and appropriate ecologically-sound activities;
- To assist protected area agencies in building political support for protected areas as a worthwhile concern; and
- To define a better process of decentralization and regionalization of protected area activities, resources and responsibilities, including the involvement of NGOs and the private sector.
Today, the existing protected areas consist of a mix of formally designated areas which include 36 forest reserves, 13 wildlife sanctuaries, 3 environmentally sensitive areas and 1 marine protected area (Figures 1 and 2), designated under the Forest Act, Conservation of Wildlife Act, Environmental Management Act’s Environmentally Sensitive Areas Rules, and the Marine Preservation and Enhancement Act respectively.

However, it should be noted that up to 74 specific areas have been identified within all the previously cited plans for protected areas, as potential sites for protection in Trinidad and Tobago that have not yet been afforded legal protected status. In addition, national commitments under the Convention on Biological Diversity (CBD) and its various programmes of work mean that the country is committed to the expansion and improved management of its PAs, in particular marine areas, which remain underrepresented in the existing, legally-established framework.

The Convention on Biological Diversity recommends that 17% of a nation’s terrestrial areas and 10% of marine areas should have formal protected area status, and the Government of the Republic of Trinidad and Tobago has explicitly committed to implementation of its obligations under the CBD, within the National Wildlife Policy (2013) and the National Protected Areas Policy (2011).
Designing the new Protected Area System – The Approach

The development of any protected area system should take into consideration the biological, socio-cultural and economic environment within which these protected areas will exist, and “future-proof” these areas, as much as possible, to ensure that irreplaceable biological, pedological and geological entities, patterns and processes are not lost. Trinidad and Tobago’s existing protected areas provide an important starting point on which to build a resilient system, as many remain important reservoirs of biodiversity and geodiversity. In addition, previous attempts to design protected areas for the country, have provided an important list of baselines with good representation of the range of the important and unique biological and geomorphological systems present on the islands.

The new protected area system uses these foundations to build the list of proposed protected areas that will be consistent with the internationally recognized IUCN Protected Areas classification system. The use of the IUCN system was explicitly articulated in the National Protected Areas Policy (2011), and the new plan follows through with this commitment. It will be underpinned by the best available scientific knowledge and methods.

The following design approaches will be utilized to assess the existing and previously designated protected areas through a gap analysis of existing terrestrial, freshwater and marine protected areas, to ensure the new system enhances the long-term conservation of biodiversity:

1. **Representation** – the areas included in the protected area system should conserve all the species, ecosystems, geomorphological and pedological, elements, patterns and processes in the country. New areas are to be recommended to fill ecosystem gaps.

2. **Resiliency** – each of the protected areas and the system as a whole, should be designed to ensure that protected elements, patterns and processes can be sustained in the system. This requires an approach that emphasizes the size of the area, its shape, connectivity with other areas, and its ability to maintain viable populations in the face of currently understood long-term patterns and processes of disturbance and recovery, as these issues are known to be important for the long term viability of protected areas.

3. **Redundancy** – the new protected area system should as much as possible ensure that sufficient redundancy exists in the protected area system to ensure that if a catastrophic natural or anthropogenic disturbance occurs, none of the species, ecosystems, geomorphological and pedological, elements, patterns and processes in the system, will be lost.

4. **Ecosystem-based management** – protected areas in the new system will be designed to be as realistic as possible in assumptions about short/medium term human disturbance. This requires incorporating a landscape-scale approach to planning and zoning of the protected area system. Such an approach explicitly recognizes that managing these areas will require a holistic ecosystem-level approach to conservation, which explicitly accounts for current land ownership, development patterns, trends in consumptive and non-consumptive use and future known drivers (e.g. climate change), and political practicality.
**Ecosystem management**

The incorporation of current human ownership, development and traditional use patterns in the new protected area system will be accomplished by GIS/spatial modelling of current trends in urbanization and land-ownership patterns to identify protected areas for which the use of zoning (e.g. using the Man and the Biosphere zoned use pattern) within and around these sites will be recommended to buffer the potential anthropogenic impacts. This approach will also be important for the design of corridors to ensure protected area connectivity. An important element in the design will be to explicitly account for the ability of human populations to have appropriate access to natural areas and this criterion will be used to add to the system, even where minimum targets for ecological redundancy have been met. In this regard, the new protected areas will, where possible, explicitly take into account issues of traditional use, access and uniqueness, to assign each of the new sites to a relevant protection class that reflects the intentions of the National Protected Areas Policy (2011), using the IUCN Protected Areas classification system as a guiding framework.

**Representation**

To ensure the system of existing and proposed reserves in the new protected areas system, we will use GIS-based remote sensing and current mapping data on local biodiversity hot-spots, geology, pedology, benthic, and climatic patterns to conduct a gap analysis. The analysis will include information on current understanding of patterns of endemism and be designed to ensure ecological representation for terrestrial, freshwater and marine systems. This will allow identification of important locations which have not been previously identified by earlier plans, for national-level biodiversity protection. The gap analysis will include all the areas already identified in the 1980 National Parks Systems Plan, as well as the other previous attempts to define protected areas for the country. It will also use updated remote sensing data to determine their current status, with specific attention to degrees of deforestation and other signs of degradation since they were first identified/designated as protected areas.

**Resiliency**

Climate change, over-harvesting, alien invasive species, rapid urbanization, unplanned development (e.g. squatting) and agricultural intensification have been and will for the foreseeable future, remain key threats to the protected area system. This will include an integration of current understanding of threat levels and known vulnerabilities of assessed biological entities in the country. Ensuring the resiliency of protected areas in the new system will require that the selection of the location, shape and importantly, connectivity of the protected areas are explicitly planned in their design. This will reduce the degree of edge-effect, improve edge-to-interior ratios, and ensure that meta-populations of wildlife and plants in these ecosystems are able to move across the landscape in response to climate change and recolonize disturbed areas or places where disease or over exploitation have led to local loss of these animals and plants. In this regard, a key element of the design of the new protected areas will be the use of riverine corridors of trees, between 50 - 250m wide, to ensure connectivity (as much as possible) between protected areas in the new system.

**Redundancy**

While there will be several unique areas and species that are protected in the new protected area system, and which by definition will have no duplicate, throughout the design of the new system, there will be a focus on ensuring that where possible, protected areas within the new system serve as duplicates of the species, ecosystems and processes protected elsewhere in the system. This is important, given the expectation that long-term climatic changes will see increased disturbance from drought, anthropogenic forest fire and storm/hurricane damage. Any one of such disturbances could be catastrophic to a single reserve in the protected area system. The strategy in the design of the new protected area system will be to identify minimum targets for protected areas within the system, to represent the same ecological community and so provide this ecological redundancy.
References:


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